Growing WILD

Fall 1997

Utah's Project WILD Newsletter

Utah's Unbelievable Ungulates!

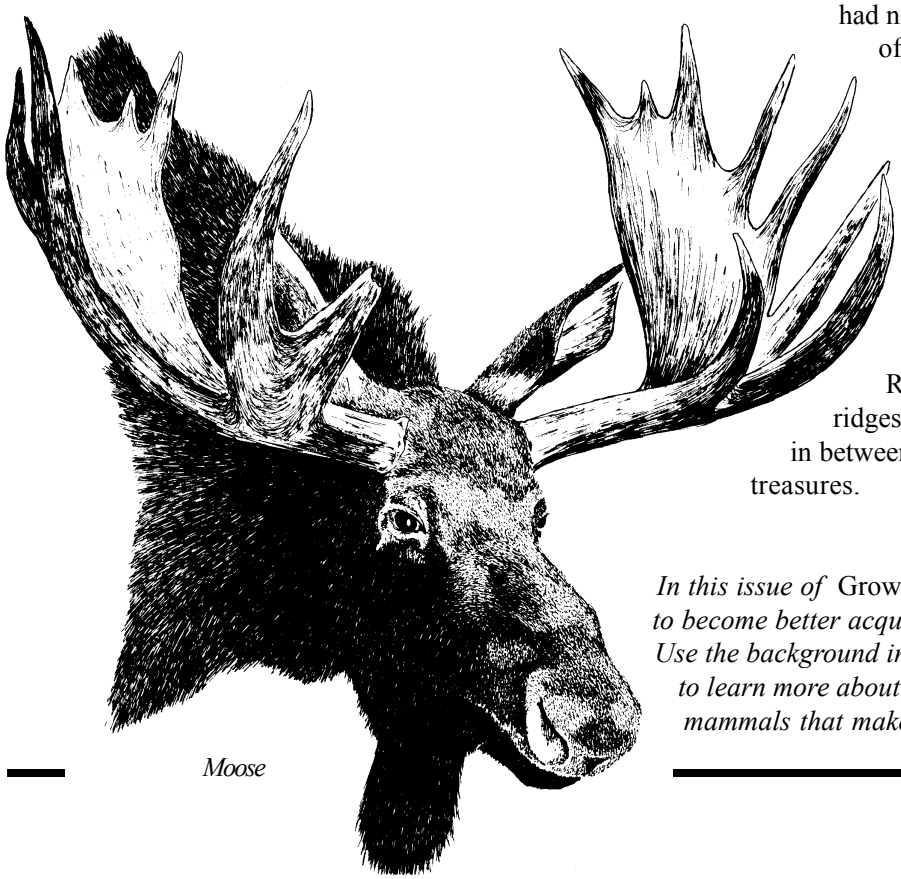
Ungul...what? No, ungulate (UNG-gyoo-lit), the scientific word for mammals with hooves. Utah is home to a wide array of ungulates, including the *Cervids*, deer, elk and moose, which possess antlers during the breeding season, as well as pronghorn, mountain goats, bighorn sheep and bison, which all bear horns.

Hoofed mammals, in essence, walk on their toenails. All of Utah's wild ungulates belong to the order *Artiodactyla* - the even-toed ungulates which have two or four weight-bearing toes on each foot. Over evolutionary time, the bones in the feet of these ungulates have lengthened and fused to maximize speed, a defensive strategy for survival. Ungulates are known as *cursorial* mammals, meaning adapted or specialized for running.

All ungulates are primarily herbivorous mammals, living on a diet of grasses, herbs, shrubs and trees. All of Utah's ungulates are also members of the suborder, *Ruminantia,* ungulates which have a specialized digestive system with a four-chambered stomach to efficiently process forage high in cellulose and lignin.

When feeding, the well adapted grinding teeth of ungulates and a side-to-side motion of their lower jaw help ruminants begin mechanical breakdown of fibrous plant materials. Later, bacterial fermentation of cellulose in their gut helps continue the process of digestion. After fermentation, the "cud" is regurgitated for additional breakdown through chewing (rumination), and then passed into the next part of the digestive tract where nutrients are absorbed.

Utah's ungulates have played a major role in the human history of the region. Fremont and Anasazi petroglyphs depict a variety of wild ungulates, and a significant portion of Native American culture and spiritual life has revolved around ungulate species which provided them with food, shelter, tools, weapons, jewelry and more. By the 1850s, Utah settlers had nearly wiped out already depressed populations of many of its ungulates through overhunting, alteration of the landscape, introduction of livestock, and water diversion projects. Sound management practices and reintroduction efforts since the turn of the century have helped to restore population numbers to healthy levels. Today, continued urbanization and associated loss of habitat is the major threat to Utah's ungulates.



Moose

Ranging from the highest alpine peaks and ridges to the hottest deserts, and almost everywhere in between, Utah's ungulates are truly underrated treasures.

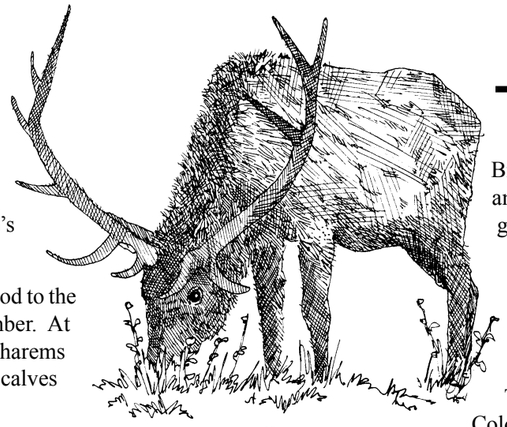
In this issue of Growing WILD*, we invite you and your students to become better acquainted with Utah's unbelievable ungulates. Use the background information, resources and activities provided to learn more about these uniquely adapted and interesting mammals that make up a valuable part of Utah's fauna.*

Understanding Utah's Ungulates!

Rocky Mountain Elk - *Cervus elaphus nelsoni*

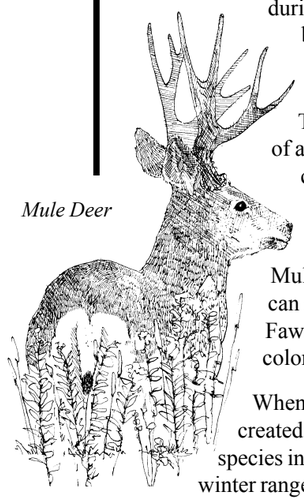
Elk are the second largest member of the deer family, averaging four to five feet at the shoulder and weighing up to 700 pounds. The Shawnee called them "wapiti" which refers to their characteristic white rump. In 1971, the Rocky Mountain Elk became Utah's state mammal.

In Utah, elk begin antler growth in April. A soft, skin-like "velvet" covering supplies blood to the growing antlers which can span five feet. The "rut" or breeding season begins in September. At this time, bull elk can be heard sounding high-pitched bugles and seen sparring to defend harems of 15 to 30 cows. After breeding, elk migrate to lower elevation winter ranges. In May, calves weighing approximately 30 pounds are born.



Elk

Elk once ranged widely across North America. By the late 1800s they were virtually eliminated from Utah with only 700 elk remaining in 1915. Management and transplant efforts, begun in 1913, have rebuilt Utah's elk herds to about 60,000 strong. Today, they are found in mountainous habitats in the summer, and in lower valleys during the winter. Hardware Ranch in Utah's Cache Valley hosts a wintering population ranging between 300 and 800 elk and provides an excellent opportunity to view these magnificent animals.



Mule Deer

Rocky Mountain Mule Deer - *Odocoileus hemionus hemionus*

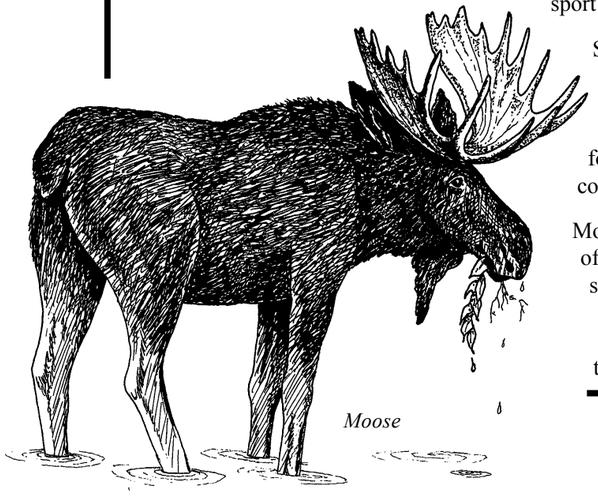
The mule deer gets its name from its large ears (up to 11 inches long) which resemble those of a mule. Mule deer antlers branch equally, in contrast to those of white-tailed deer which consist of a main beam with prongs. The number of points on a buck's antlers does not solely indicate its age, but also reflects genetics, and the quality and quantity of forage. Record antlers have measured up to four feet between beams.

Mule deer are well designed to avoid predation. Their best defense is speed, and mule deer can run up to 35 miles per hour for short periods and leap up to 25 feet in a single bound. Fawns also have special adaptations to protect them from predators, including white-spotted coloration for camouflage, an instinctive ability to remain still, and a complete lack of body scent.

When pioneers first came to Utah there were few mule deer, but cattle grazing and agriculture created new deer habitat and populations grew. Today, the mule deer is the most hunted game species in Utah, making management to maintain healthy herds especially important. Lack of good winter range and loss of habitat to development are major factors limiting mule deer populations.

Moose - *Alces alces shirasi*

The largest member of the deer family, moose are quite a spectacle. Although the smallest subspecies of moose lives in Utah, bulls still average an imposing seven feet at the shoulder and tip the scale at around 1,000 pounds. Bulls also sport massive palmate antlers with spreads of three to five feet.



Moose

Solitary animals, moose are relatively shy and secretive, but cows protecting calves can be quite aggressive. Moose are found primarily in lush montane riparian areas, where nearly 80% of their summer diet of aquatic vegetation and willows can be found. They are excellent swimmers and waders, and sometimes completely submerge to avoid insects.

Moose are not native to Utah, but found their way to the north slope of the Uintas from Yellowstone National Park. They were first sighted in this region in 1918. Since then, moose have naturally extended their range, and are now often seen in canyons throughout northern and central Utah. They have been successfully transplanted into the Manti and Fishlake mountains as well.

Desert Bighorn Sheep - *Ovis canadensis nelsoni*

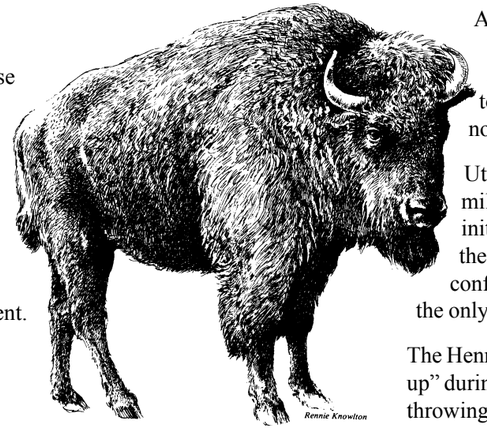
Bighorn sheep are noted for their large c-shaped or curled horns. These horns are permanent and consist of a sheath of keratin covering a bony core. When the horns temporarily stop growing each breeding season, a ring is formed leaving a record of age.

During the breeding season, rams charge each other in dominance battles, meeting head-on at a combined speed of nearly 30 miles per hour. This creates a loud crashing sound that can be heard a mile away. Buttressed skulls and thick, powerful necks enable the rams to withstand the force of these collisions.

Typical desert bighorn sheep terrain consists of rocky, steep canyons and washes of the Colorado Plateau. Utah populations remained free from human interference until the 1940s when uranium was found within their home range. Numbers have since declined due to competition with livestock for range, disease transmission from domestic sheep, poaching, and loss of habitat. Habitat improvement and reintroduction efforts have helped restore populations.

Bighorn Sheep

American Bison - *Bison bison*



Bison

An estimated 60 million bison once roamed across North America. Unregulated hunting lowered this number to fewer than 1,000 by 1900. Bison were brought back to Utah for Native Americans by the U.S. government in 1880. These animals were subsequently sold to a livestock company which released them on Antelope Island in 1863. Antelope Island, now a state park, maintains its bison herd near 700 animals.

Utah's Henry Mountains are home to another bison herd. The bison range over 240 square miles on the north and west sides of the Henry's. In 1941, three bulls and 15 cows were initially released into the southeastern San Rafael Desert. By 1963, the herd had migrated to the Henry Mountains. The size of the herd is managed by hunting and trade to minimize conflicts with agricultural and grazing interests. Numbering between 300 and 400 bison, it is the only free-roaming herd in the lower 48 states.

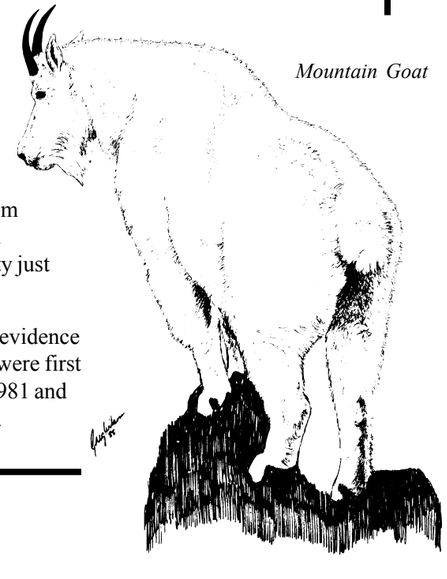
The Henry Mountains are especially rough and broken making it difficult to spot bison. They "herd up" during the rut in July and August though, which makes them easier to find. Bellowing bulls throwing up clouds of dust in powerful shoving matches make quite a spectacular show.

Mountain Goat - *Oreamnos americanus*

Mountain goats live along the highest and most forbidding rocky cliffs and crags, picking their way along narrow ledges, like acrobats, to feed on tiny alpine plants. Their hooves have specialized suction cup-like pads to help them cling to the steepest slopes. They are really not true goats at all, but are most closely related to the chamois of the Alps and the antelope of Africa. Their genus name, *Oreamnos* is from the Greek words *oros,* meaning "mountain" and *amnos,* meaning "lamb."

Mountain goats are covered with a thick, long white coat that insulates them from the elements of their harsh environment. They have few natural predators, with avalanches posing a greater threat. The young, called kids, can climb with agility just hours after birth.

Although it is not clear whether mountain goats were native to Utah, prehistoric evidence indicates they once inhabited the state. To restore populations, mountain goats were first released onto Lone Peak in the Wasatch Range in 1967. Additional releases in 1981 and 1982, have resulted in populations which now exist on Mt. Timpanogos and Mt. Olympus, as well as in the Uinta Mountains and Tushar Mountains.



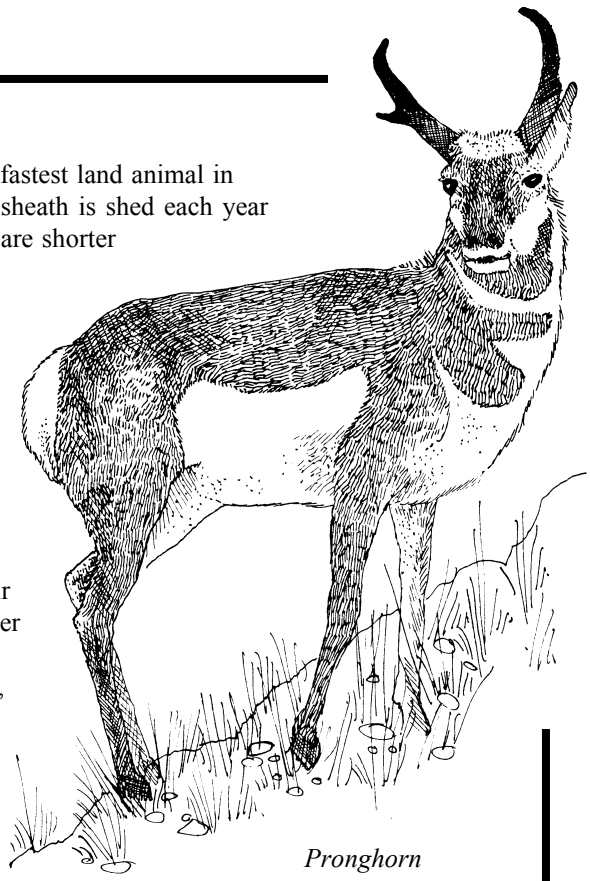
Mountain Goat

Pronghorn - Antilocapra americana

With a top speed of over 50 miles per hour, the pronghorn is the fastest land animal in North America. Pronghorn have true horns, but like antlers, the sheath is shed each year after mating in the fall. Both sexes bear horns, but those of does are shorter and lack the curved prongs reflected in their name.

Large eyes set out from their skull give pronghorns a 360 degree field of vision. At the first sign of danger, they raise the long white hair of their rumps and flash a signal to other members of the herd. At two days old a fawn can run faster than a horse, but it lacks the stamina needed to keep up with a herd in flight. It therefore hides in vegetation for about the first two to three weeks of its life.

Pronghorn have existed in Utah for about 20 million years. Their original range extended throughout most of the foothills and lower valleys of the state. In the 1800s, settlement and land use changes forced pronghorn from choice ranges to desert areas. In addition, unregulated livestock grazing and water diversion for agriculture significantly reduced pronghorn numbers. Reintroductions through the 1900s, better range management and the creation of water sources have boosted pronghorn populations. Today, they are found primarily throughout the West Desert and within the dry eastern regions of Daggett, Duchesne and Uinta counties.



Pronghorn

Ungulate Activities

Use the following Project WILD activities with your students to learn more about Utah's ungulates.

- **Interview an Ungulate** - adaptation of "Interview a Spider", pg 14
- **Habitat Rummy** - have students create habitat cards for elk, pronghorn, mountain goats, moose and bighorn sheep, pg. 40
- **Museum Search for Wildlife** - many ungulates are portrayed in art, pg 72
- **Make a Coat** - early cultures relied heavily on ungulates to make clothing, pg 82
- **Oh Deer!** - substitute another ungulate in this fun activity, pg 146
- **I'm Thirsty** - explore how bighorn sheep survive in their desert habitat, pg 154
- **Wildwork** - invite a wildlife manager to speak to your class, pg 168
- **Checks and Balances** - request our newly created elk cards or those for the Henry Mountain bison herd, pg 186
- **The Hunter** - all Utah's ungulates are game species; examine different viewpoints regarding hunting, pg 190
- **Deer Crossing** - investigate a wildlife management issue involving deer, pg 202
- **Migration Barriers** - explore how human activities can impact ungulate migration routes and devise solutions, pg 262
- **To Ranch or Not to Ranch?** - adaptation of "To Dam or Not to Dam"; use background information provided in this issue to create roles for conducting a debate, pg 134, Aquatic guide

Resources

Home, Home on the Range

Request a copy:

Elk "Checks and Balances" Adaptation Packet - includes elk activity cards, elk herd details and unit location map, data sheet, and information on the history of elk management in Utah.

WILD About Elk Activity Guide - in addition to several excellent Project WILD activities adapted for elk, this guide, published by the Rocky Mountain Elk Foundation and National Project WILD includes extensive background information about elk and elk management. $3.00

Henry Mountain Bison Herd Information Sheet - provides history, biology and population management information about the free-roaming bison herd of Utah's Henry Mountains.

Rocky Mountain Elk - part of our popular "Wildlife Notebook Series".

The Deer Family - colorful and informative issue of the "Zoobook"series. $2.00

Looking at Elk - Habits, Habitat, History - copy of excellent booklet in the "Biologue" series produced by the Teton Science School.

The Pronghorn - "Wildlife Notes" information sheet produced by the National Wildlife Federation.

Antelope Island Bison, Bighorn Sheep and Pronghorn - issue of Antelope Island State Park newsletter featuring articles on a variety of wildlife species found on the island.

Mule Deer Profile - copy of an article from Idaho's "Wildlife Express" newsletter.

(801) 538-4719

For Check-out:

Ungulate Trunk - antlers, skulls, hides, tracks, scat, activity guides, background information and more make up this kit. Available for pick-up only.

Life at the Top: Wildlife Above Timberline - mountain goats and bighorn sheep are featured in part of this family-oriented video exploring the lives of alpine wildlife. 30 min. Grades 3-9

The Return of the Bison - video examining the historical plight of the bison, its successful comeback to the Great Plains, and its fascinating life history. Features excellent photography from Yellowstone National Park and other wildlife refuges. 24 min. Grades 7-12

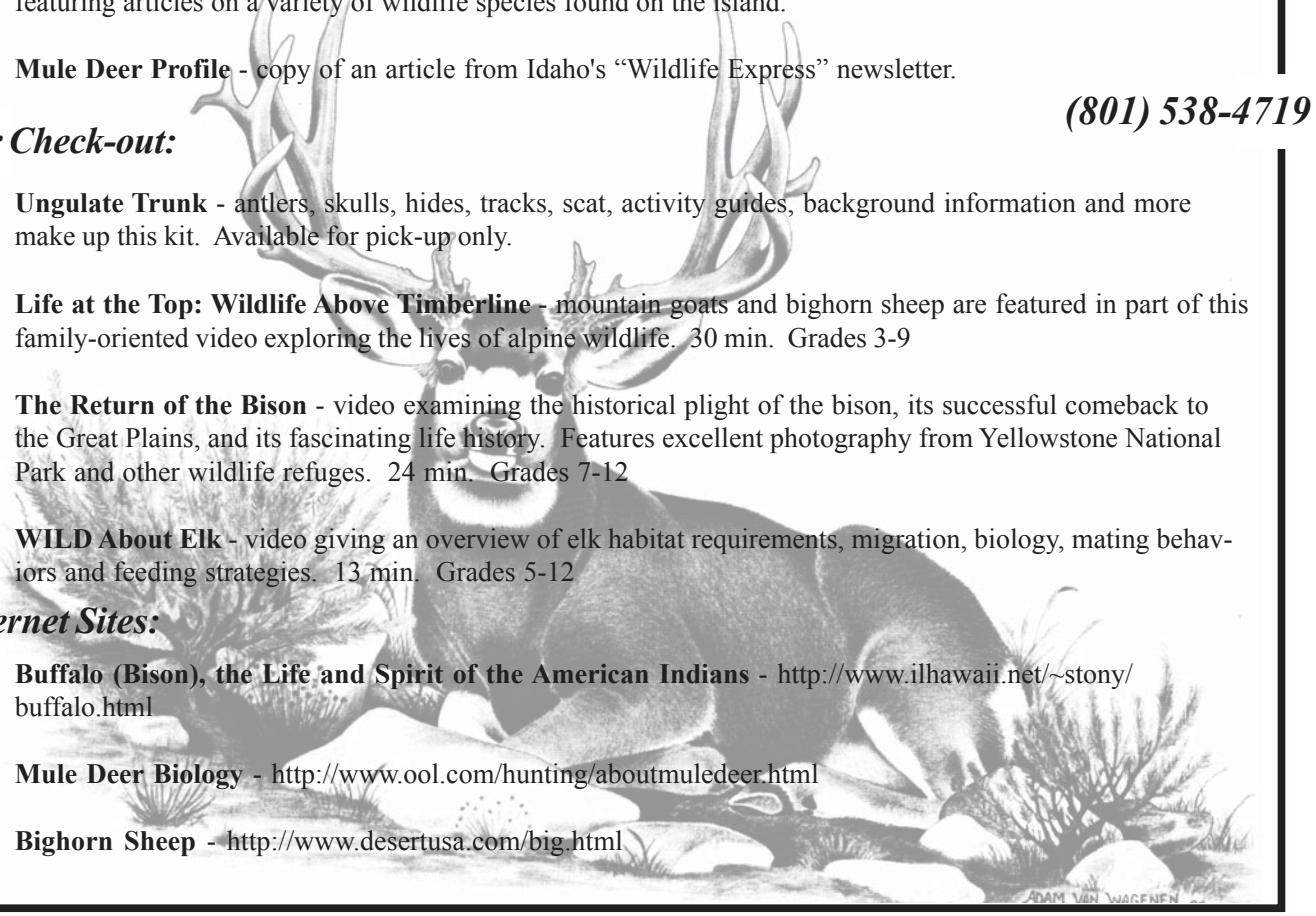
WILD About Elk - video giving an overview of elk habitat requirements, migration, biology, mating behaviors and feeding strategies. 13 min. Grades 5-12

Internet Sites:

Buffalo (Bison), the Life and Spirit of the American Indians - http://www.ilhawaii.net/~stony/buffalo.html

Mule Deer Biology - http://www.ool.com/hunting/aboutmuledeer.html

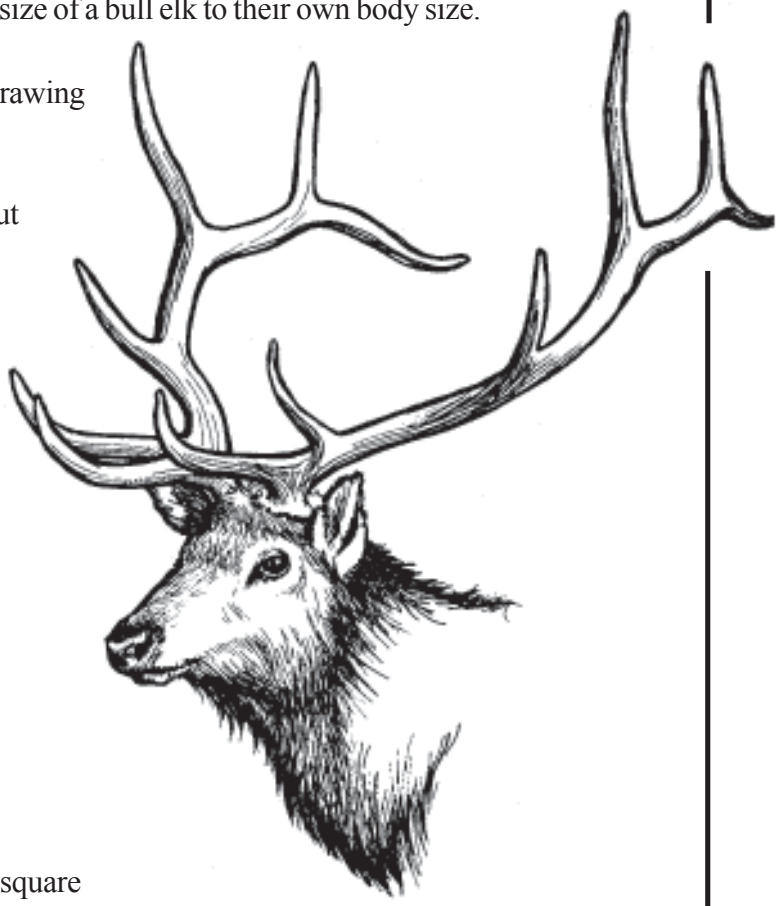
Bighorn Sheep - http://www.desertusa.com/big.html



Objective: Students will be able to compare the size of a bull elk to their own body size.

Method: Students use graphing, measuring and drawing skills to draw a life-size bull elk.

Background: The average bull elk weighs about 700 pounds, measures 5 feet at the shoulders and 8 1/2 feet from nose to tail.



Materials:

Elk picture with grid overlay
35 - 18 inch x 18 inch sheets of paper
Colored pencils, markers or crayons
Color pictures of elk
Tape

Procedure:

1) Make a master copy of the elk picture with the grid overlay (see next page).

2) Cut the picture of the elk grid into 1 1/2 inch square sections along the grid lines.

3) Give each student a 1 1/2 inch section and have them enlarge the contents of their square to a 18 inch x 18 inch sheet of paper (excluding the number code). Have students write their number code and indicate the top of their section on the back of their enlargements.

4) Have students with adjoining sections work cooperatively to ensure that lines within sections will match up.

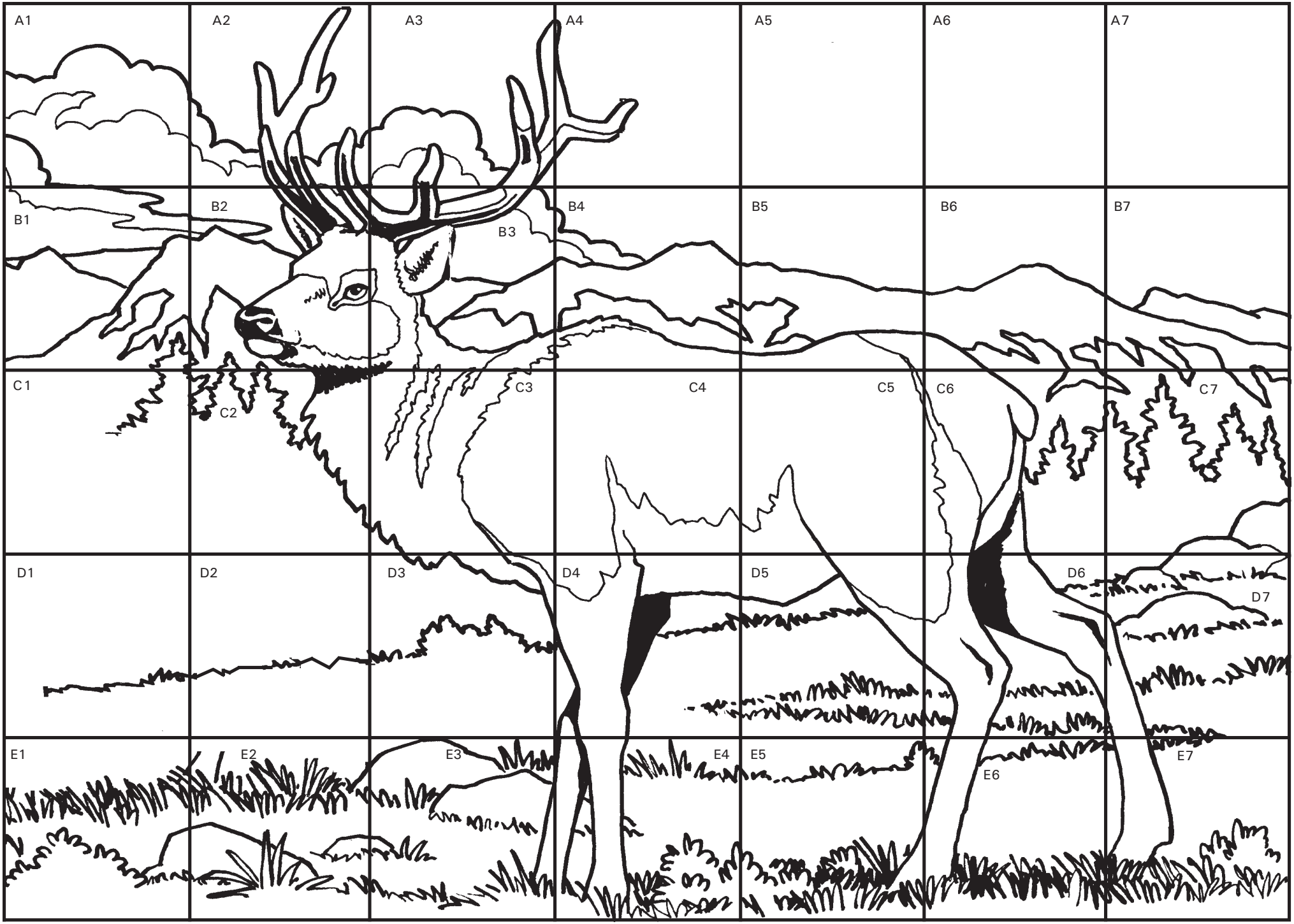
5) When all the sections have been completed, have students tape them up, in order, on a wall or on the floor (indicate placement of the sections with a grid system similar to one on a map).

6) Have students stand next to the completed elk, or lay on top of it to compare its size to theirs.

7) Have students look at colored pictures of elk to color the segments of their elk.

8) Have students draw a cow and calf elk and create enlarged versions of those as well.

Adapted from "Whale of a Tail", Aquatic Project WILD, 1995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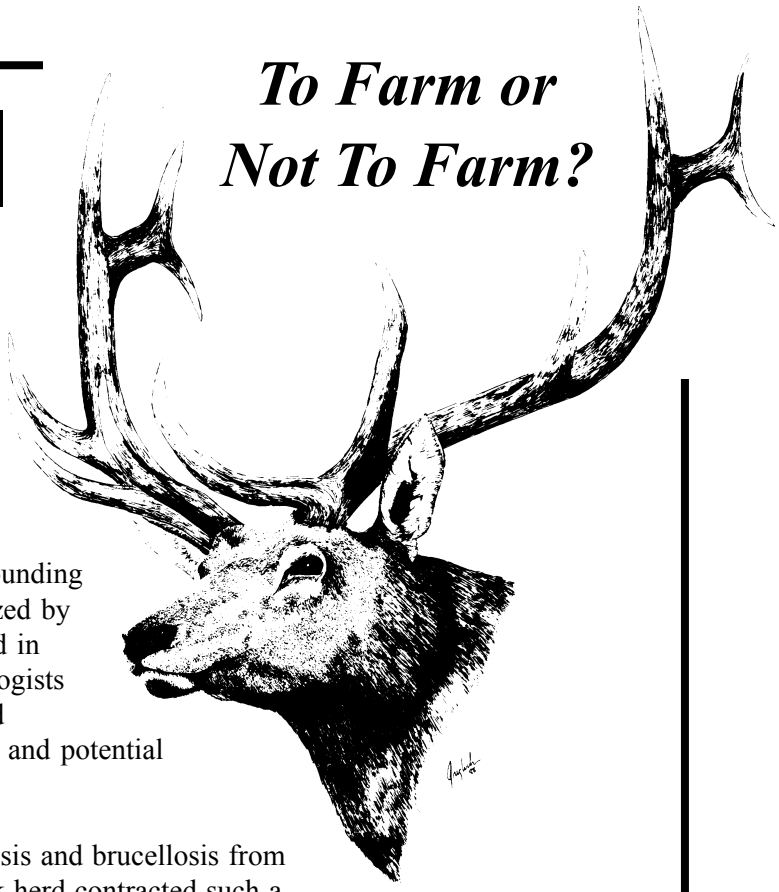
Issue Investigation

To Farm or Not To Farm?



Late last Fall, legislation known as the Alternative Livestock (Elk Farming) Bill was introduced for consideration by Utah Legislators. This legislation, passed early in 1997, allows private individuals to possess, raise and breed domestic elk for commercial purposes.

There was a considerable amount of debate surrounding this proposed bill. Elk farming has been authorized by legislation in several western states and prohibited in others. Utah Division of Wildlife Resources biologists surveyed other western states about the issue, and identified an array of concerns about elk farming and potential impacts on wildlife.

The potential spread of diseases such as tuberculosis and brucellosis from captive herds, was a major concern. If a wild elk herd contracted such a disease, the entire herd would need to be eradicated to eliminate the problem. The Utah State Veterinarian assured the Division of Wildlife Resources that such diseases could be safely controlled in elk farming situations with strict regulation measures imposed by the Department of Agriculture, the agency overseeing elk farming in Utah.

The development of a commercial market for elk and elk products posed a concern for wildlife law enforcement officers who feared an increase in poaching or trapping of wild elk calves. Domestic elk stock cost from $8,000 to $30,000 per elk. Elk farming proponents claim commercial farming would instead, act to reduce the black market trade for velvet antlers, meat and trophy heads that impacts wild herds.

Biologists are concerned about the genetic purity of Utah's native elk populations. Domestic elk stock have sometimes been bred with European red deer, producing genetically impure hybrid offspring. In addition, escaped domestic elk could potentially breed with wild elk, jeopardizing the genetics of wild elk which are adapted to surviving natural conditions.

The treatment of elk on elk farms has also been controversial. Antlers are removed from elk while still in velvet, prior to when they are naturally shed. Others feel that farming of elk lessens society's "value" of wild elk.

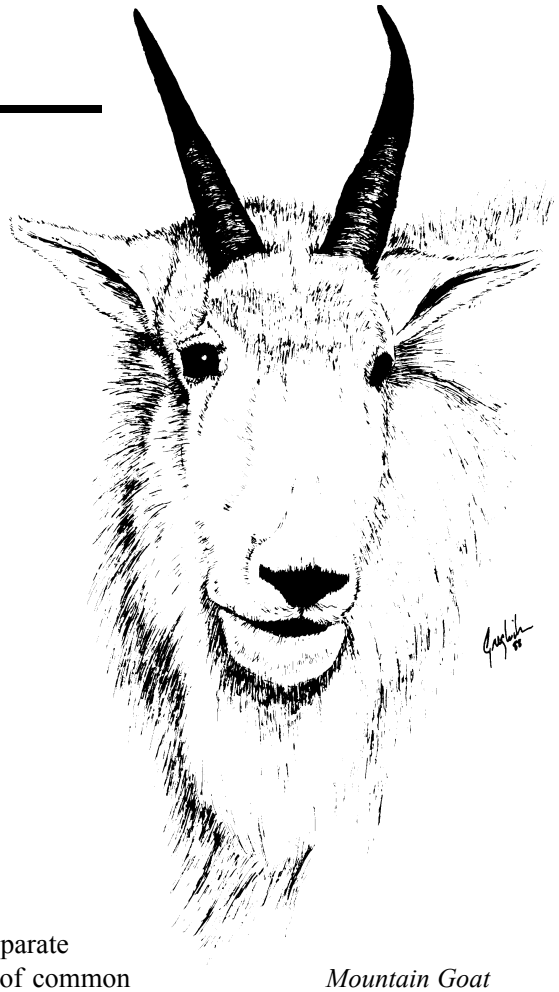
Elk farmers believe that elk farming represents an alternative means for small family farmers to survive economically where traditional crop and livestock enterprises have fallen short. They argue that the elk's low-fat meat is creating an increased consumer demand, while a well established international market for antlers makes use of a high-value renewable resource.

Activity Adaptation

Use the debate format of the Aquatic Project WILD activity, "To Dam or Not To Dam?" to investigate the issue of elk farming further with your students. Request a set of articles and information by calling the Project WILD office at (801) 538-4719.

Resources

Chew on These!



Mountain Goat

Free! Call Project WILD at: (801) 538-4719

Endangered Species: The Road to Recovery - large, colorful poster created by the U.S. Fish and Wildlife Service, depicting an array of endangered species that have been making a recovery in our nation due to the Endangered Species Act.

Western Hawks in Flight - Information leaflet/student activity guide created by the Colorado Bird Observatory to teach about raptors.

Some Like It Hot - beautiful full-color poster, informative article and activity suggestions to have students learn about the Sonoran Desert. Created by the Bureau of Land Mangement.

Watersheds: Where We Live - animated poster and information about watersheds and their value. Created by the U.S. Geological Survey. Elementary or Middle school version available.

Bird Habitats of Utah: The Mojave and The Riparian Zone - two separate articles from the journal, *Utah Birds* with descriptions and illustrations of common plants within these habitats.

TRACKS - an IBM compatible computer game for students to learn a variety of common tracks. Created by the Colorado Division of Wildlife. Send a **new** 3.5 HD IBM **preformatted** disk to Project WILD, 1594 West North Temple, Salt Lake City, UT 84114-6301 to receive your copy.

Check-out the following from Project WILD:

Wildlife Forever - an excellent CD Rom featuring many of North America's wildlife species, and an educator's guide with 15 lessons focusing on wildlife management concepts such as predator/prey relations, carrying capacity, and the value of habitat.

Wild Turkey Information Packet - wild turkey management background information and photos of Utah's wild turkey species, provided by the Utah Wild Turkey Federation. Great supplemental information to accompany the Project WILD activity, "Turkey Trouble".

Wildlife Internet Sites:

Yellowstone Journal - up to date information about wolves, grizzlies and other Yellowstone wildlife - **http://www.yellowstonepark.com**

Mammals on Postage Stamps - good information to accompany the Project WILD activity Wildlife as Seen on Coins and Stamps - **http://www.philately.com/zoology/** Codes behind animals listed refer to stamp catalog numbers.

Bird Monitoring Programs - informative site to accompany Project WILD activity "Bird Song Survey" - **http://www.im.nbs.gov/birds.html**

Action

SchoolYard Naturescaping Grants

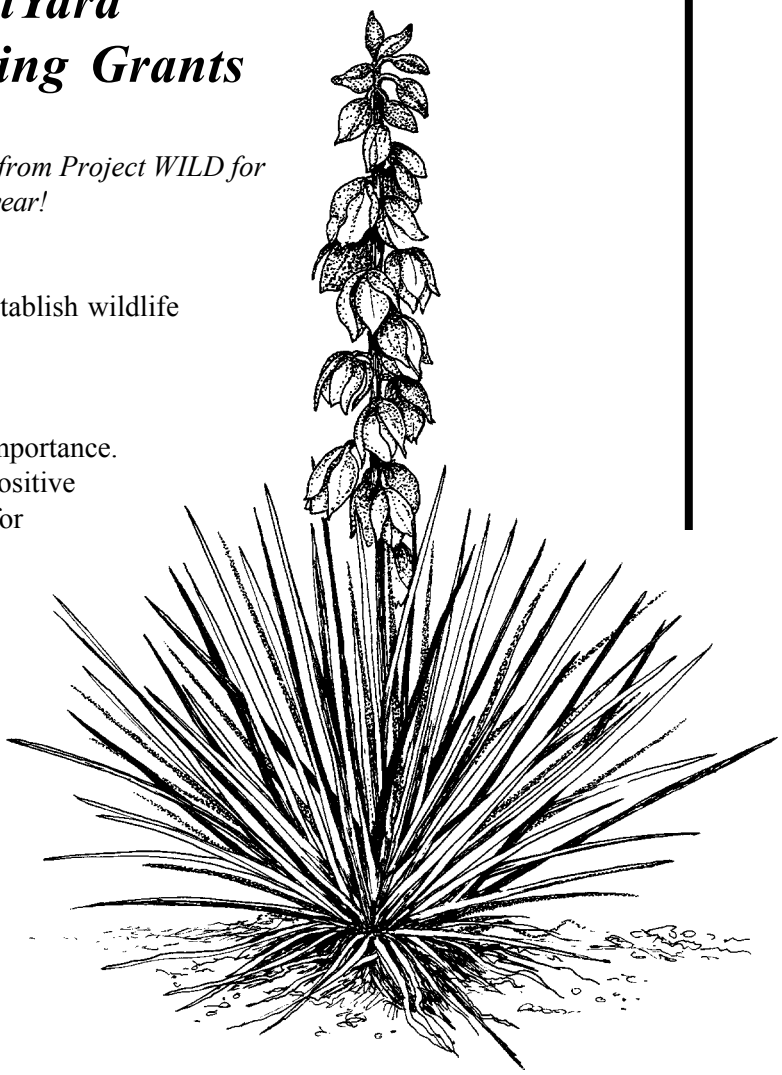
Win a $300 student action grant from Project WILD for the 1997-1998 school year!

What is a Naturescaping Grant?
It is an action project designed by students to establish wildlife habitat on or near their school grounds.

Why does it focus on habitat?
Providing habitat for wildlife is of increasing importance. Naturescaping projects allow students to take positive actions which will result in long-term benefits for wildlife.

How large a project does it have to be?
It can be as simple as planting native plants for birds and butterflies or as extensive as revegetating winter range for big game animals. Many schools use the Naturescaping Grant as "seed" money and solicit additional funding from community and school sources.

What should the emphases be?
- To involve students in the project planning and implementation
- To design areas for interdisciplinary studies
- To plant native species
- To correlate the project to state core curricula



Yucca glauca

As long as the natural world is a remote place "out there" and not to be found in the familiar settings where we live, protection of the earth's environment is unlikely.

- Randy Haluza-DeLay -

Yucca glauca seed pod

How do you apply?
- Request an application from Project WILD, Utah Division of Wildlife Resources, 1594 West North Temple, Box 146301, Salt Lake City, UT 84114 You will also receive the booklet, *Creating Landscapes for Wildlife* (a guide to Utah's vegetative zones and native plants).

- Complete the application form and return it to the Project WILD office by ***November 15, 1997.***

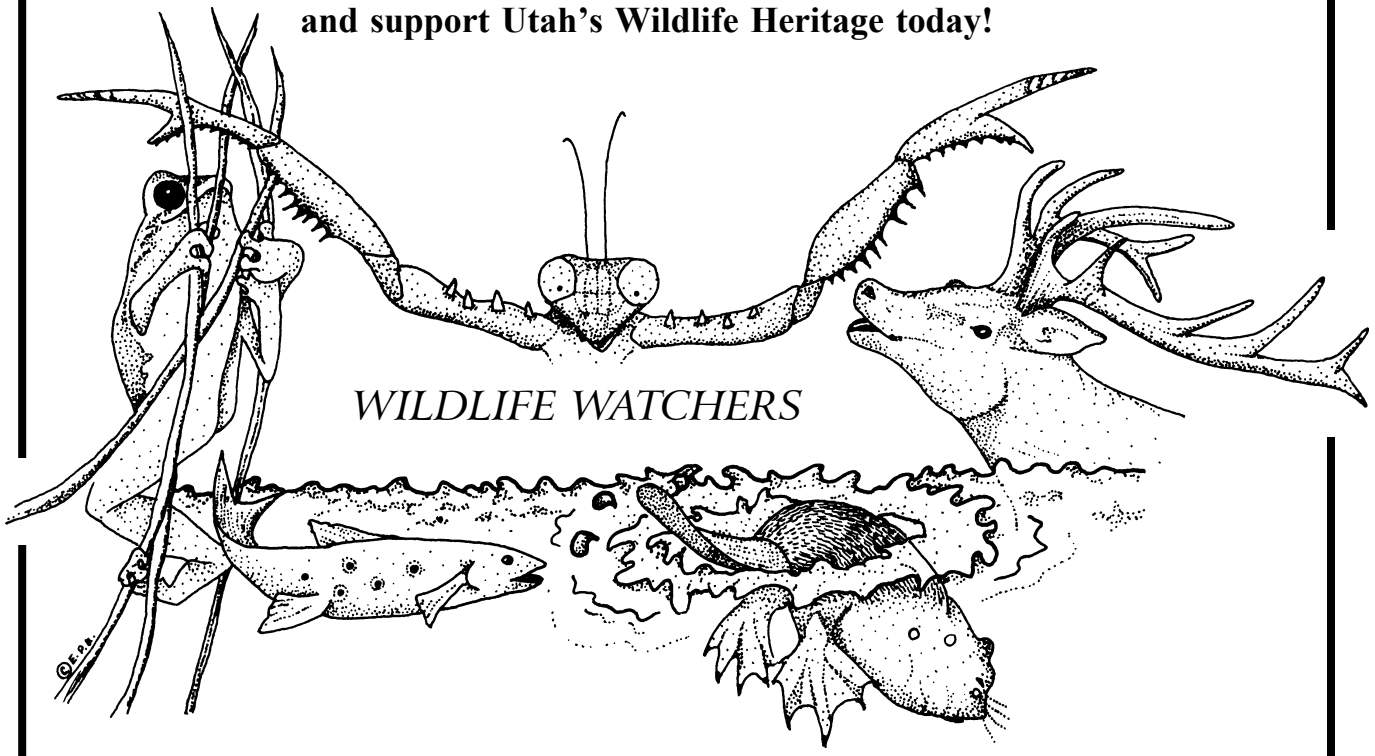
Utah's Project WILD is able to fund Naturescaping projects due to a grant from the National Project WILD Program, the Phillips Petroleum Foundation and the National Fish and Wildlife Foundation.

Action *Support Utah's Wildlife Heritage!*

Here's your chance to do more for wildlife.

Anyone interested in viewing and helping Utah's wildlife can do so by purchasing a ***Wildlife Heritage Certificate.*** Funds derived from the Wildlife Heritage Certificate program help the Utah Division of Wildlife Resources sponsor wildlife viewing events including Bald Eagle Day, Migratory Bird/Wetlands Day, Raptor Watch and Kokanee Salmon Day. In addition, these funds help pay for interpretive signing, trail development and construction of viewing blinds at watchable wildlife sites throughout the state. For $15 ($5 for children under 12 years of age) you can receive a Wildlife Heritage Certificate. Persons who purchase a Wildllife Heritage Certificate receive a complimentary copy of the book, ***Utah Wildlife Viewing Guide*** (see below). If you would like to contribute to preservation and enhancement of habitat for Utah's wildlife as well, you can contribute $5 to the ***Wildlife Habitat Authorization*** program (required for persons 14 and older who wish to obtain a Wildlife Heritage Certificate).

Request a Wildlife Heritage Certificate application from the Project WILD office by calling 538-4719 and support Utah's Wildlife Heritage today!



Utah Wildlife Viewing Guide:

Watching wildlife has become especially popular during the past few years. Discover where you can view many of Utah's wildlife species. The Utah Wildlife Viewing Guide, available from the Utah Division of Wildlife Resources, Watchable Wildlife Program, is your guide to 92 of the best and most easily accessible wildlife viewing sites in Utah. This book, complete with colorful pictures, clear directions and maps, and best viewing times, can be ordered by calling the Project WILD office at (801) 538-4719. Cost is $5.95.

project WILD®

Utah Division of Wildlife Resources
1594 West North Temple, Suite 2110
Salt Lake City, Utah 84116

Growing WILD **is written by Diana Vos. Edited by Fred Hayes, Vicki Unander and Audrey Walker. Illustrators: Greg Wilson, Rennie Knowlton, Jill Rensel, Adam Van Wagenen and Ellen Petrick-Underwood, plus additional clip-art selections.**

STATE OF UTAH
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Division of Wildlife Resources

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